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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/778,019	02/13/2004	Dmitri Zalmanovich Garbuzov	14564-006002	4607

26161 7590 06/11/2007  
FISH & RICHARDSON PC  
P.O. BOX 1022  
MINNEAPOLIS, MN 55440-1022

EXAMINER
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NGUYEN, DUNG T

ART UNIT	PAPER NUMBER
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2828

MAIL DATE	DELIVERY MODE
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06/11/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/778,019		GARBUZOV ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Dung (Michael) T. Nguyen		2828	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) \_\_\_\_ is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 12, 13, 20, 21, 23, 24, 29, 31, 34, 38, 40, 43, 45, 50-52 and 54 is/are rejected.
- 7) ☒ Claim(s) 3-11, 14-19, 22, 25-28, 30, 32, 33, 35-37, 39, 41, 42, 44, 46-49, 53 and 55 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/13/04</u> .  | 6) <input type="checkbox"/> Other: ____                           |

**OFFICE ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent:

Claims 1-2, 12-13, 20-21, 23-24, 29, 31, 34, 38, 40, 43, 45, 50-52, and 54 are rejected under 35 U.S.C. 102(a) as being anticipated by Garbuzov et al. (High power separate confinement heterostructure AlGaAs/GaAs laser diodes with broadened waveguide) SPIE Vol.2682, pages 20-26.

Claims 1, 12, 20, 23-24, 29, 38, 45, 50-52, the entire document discloses a semiconductor laser diode comprising:

a body of a semiconductor material having therein a waveguide region (page 21) which is not intentionally doped and which is of a material which substantially confines photons therein and allows the flow of photons therealong;

means (quantum well) (page 21) within the waveguide region for generating an optical mode of photons; and

a clad region on each side of the waveguide region, the clad regions being at least partially doped to be of opposite conductivity type,

wherein said photon generating means is thinner than the thickness of the waveguide region and is spaced from the clad regions,

Art Unit: 2828

wherein at least a portion of the waveguide region on each side of the means for generating an optical mode of photons is of a uniform composition throughout its thickness, and

wherein the thickness of the waveguide regions and the composition (refractive index) of the waveguide and clad regions are such that an overlapping of the optical mode generated in the waveguide region into the clad regions is not greater than about 5% (page 25 and Fig.5).

Claims 2, 13, 21, and 43, page 25 discloses the waveguide region is of a thickness of at least 500 nanometers.

Claims 31 and 54, page 20 discloses the waveguide region is of a thickness of about 0.7 um.

Claims 34 and 40, page 21 discloses the waveguide region consists essentially of AlGaAs.

***Allowable Subject Matter***

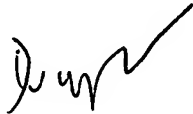
Claims 3-11, 14-19, 22, 25-28, 30, 32-33, 35-37, 39, 41-42, 44, 46-49, 53, and 55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Communication Information**

**Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

**Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.**



**Michael Dung Nguyen**  
**Primary Examiner**

5/29/07